

## Diaphragm walls and buried ammunition

European XFEL: First segments of the building pit wall on the site DESY-Bahrenfeld already cast

by Petra Folkerts

On such a large construction site, every minute counts. Excavators, cranes, shovel dozers, articulated lorries, wheel loaders and tractors with trailers are all in action at the same time – this means the logistics must be impeccable. Flexibility is also a big issue. If old war ammunition for instance is discovered during the earthworks, the Explosive Ordnance Disposal squad first has to come up to identify and dispose of the findings. This too is part of the daily work on a major construction site.

As the area was used for anti-aircraft artillery during World War II, it was already earmarked as a site where old ammunition could be found. "We are not talking about the dangerous bombs or artillery shells that did not detonate on impact and have to be defused before they can be removed," says Peter Bodes, head of the Explosive Ordnance Disposal service of the Hamburg fire brigade. "We do not expect to find such duds



The construction site DESY-Bahrenfeld on 13 March. The red crane is working on the first corner piece of the building pit wall. In the background, the bank of the Lise Meitner park is being removed.

here. But buried ammunition also has to be checked carefully before it can be removed, and sometimes it is necessary to detonate it on the spot – this is part of our tasks," Bodes explains. On the site DESY-Bahrenfeld, the experts have so far removed 24 flak shells of various calibres; one bazooka and one anti-tank shell had to be detonated. Further findings cannot yet be excluded. What may sound unsettling and dangerous to any outsider has nearly become routine for the workers on the site. The building contractor and the construction management are warned, specially trained staff are probing the ground beforehand,

all works are carried out very carefully, and everybody has the phone number of the explosive ordnance disposal squad saved in their mobile phone.

On the western side of the site, the soil is being removed in steps to bring the ground, which is about ten metres too high, to the required level. This will go on until June. In parallel, various types of crane and lifting equipment have been in action on the eastern side since early March to construct the diaphragm walls for the building pit, which are built directly inside the soil. The first segments – each of them 1.50 metres wide and 40 metres

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The clamshell-shaped shovel of the diaphragm wall excavator shortly before its first use.

Thank you, Albrecht Wagner

In honour of long-standing DESY Director Albrecht Wagner, a farewell colloquium will be held in hall 1 on 3 April starting at 13:30 h. One month after his retirement, speakers like Hamburg's First Mayor Ole von Beust, State Secretary Frieder Meyer-Krahmer, Rolf Heuer and Maury Tigner will trace back Albrecht Wagner's research life.

Weckert now officially Director

With the beginning of this year, Edgar Weckert has officially become director of photon science at DESY. Weckert, a materials and crystallography scientist, will hold this office for five years. A year ago he took over this research field from Jochen Schneider as acting director.



## DIRECTOR'S CORNER

Dear colleagues,

even in the 50th year of its existence, DESY sets the course for the future: DESY's anniversary year 2009 is not only marked by changes in the management but also by setting important trends for the future of our research.

The projects in the three research fields for the years 2010 to 2014, the next period of programme-oriented funding of the Helmholtz Association, is being evaluated this spring by renowned

advisory boards with experts from all over the world. The evaluation of particle physics took place at DESY at the end of February. The results will be available in May; however, already now it is possible to say that our programme, developed by DESY scientists in close cooperation with our international partners, met a lot of approval. In the next five years we will continue to strengthen our important role at the LHC and the ILC and we will terminate the analysis of the extraordinary HERA data.

This experimental programme is supported by a strong theory group, by scientific computing and an infrastructure for the construction and operation of large experiments, unmatched in Germany.

The Helmholtz Alliance "Physics at the Terascale" is of vital importance in the new structure of particle physics in Germany. Moreover, the evaluation of our astroparticle projects, IceCube and also the Cerenkov Telescope Array CTA in the future, which took place end of February

in Karlsruhe, had a positive result.

Therefore I am very confident that DESY will continue to play an internationally important role in particle physics at highest energies.

Yours,  
Joachim Mnich

deep – have already been filled with reinforced concrete. For each segment, a 5- to 7-metre-long “trench” is excavated and filled with a special slurry, a bentonite suspension. This prevents the trench from collapsing under the pressure of earth and water until it has been fitted with reinforcing cages and filled with around 450 cubic metres of concrete. A total of 59 such segments will be constructed in the next six months. Closely interlocked, they will form the watertight wall of the future building pit. Only then can the soil within the pit be excavated and the concrete underwater bottom plate cast. All the pits for the under-

ground shafts and buildings will be constructed in this way: one on the site Osdorfer Born and six on the Schenefeld premises. Here, the preparations for the civil engineering works will take a few more weeks. The 150 000-square metre site is nearly completely fenced, and the topsoil has been removed and stacked near the property boundaries to form protective barriers against dust and noise. The first workers already moved into the yellow office building of the civil engineering consortium. Their number will grow to nearly 50 next year when the tunnelling work will begin. The tyre washing facility is ready for use; the

entrance to the site just has to be equipped with access control. A special logistics challenge presented itself on 5 March with the arrival of a 10-axle transporter delivering a 45-tonne compact station required for the power supply of the construction site.

On the site Osdorfer Born, things are relatively quiet as the construction of the building pit will start only in May. The premises were cleaned and made accessible. The terrain then also had to be searched for explosive ordnance – a search that resulted in only one finding of old ammunition. What the experts did discover, however, were large amounts of domestic refuse that were probably buried on the site many years ago. A screening plant thus had to be ordered on short notice to separate the topsoil from the refuse. Life on such a large construction site is always full of surprises.



The topsoil is being removed on the site Osdorfer Born. The yellow screening plant can be seen on the right.



The compact station for the power supply of the Schenefeld site is set up. Behind it: the yellow office building of the construction companies.

### INFO

[www.xfel.eu](http://www.xfel.eu) → “Construction”



## Kicking off anniversary celebrations

2 March was not only the official hand-over of office from Albrecht Wagner to Helmut Dosch as chairman of the DESY Directorate – it was also the day DESY started to celebrate its 50th anniversary in a kick-off event for all DESY staff.

Here are some impressions from the event: presentations and addresses, directors dressed in DESY labcoats creating the DESY 50 logo on stage, a photo exhibition, the tapping of the beer barrel and Helmut Dosch conducting his new plumbing pipe orchestra – a lot of fun for all participants on stage and in the hall. (tz)





DESY, in front of hall 2, one morning in 1970: A fork-lift driver got hold of a reinforced concrete shielding block instead of a light concrete block. Three tons of weight difference make even the strongest fork-lift topple over.

## WHAT'S ON AT DESY

### April

- 2** Science Café DESY (<http://sciencecafe.desy.de>)  
Einblicke in dein Innerstes – Bildgebende Verfahren in der Medizin  
Martin Göttlich, 17 h, DESY Bistro
- 2 - 3** Physics at the Terascale ([www.terascale.de/detws09](http://terascale.de/detws09))  
Workshop on Detector Development  
DESY, Hamburg
- 3** Wagner-Fest (<http://wagnerfest.desy.de>)  
Farewell Colloquium Honoring Albrecht Wagner  
13:30 h, DESY, Hamburg, Hall 1 (Bldg. 26)
- 6** Colloquium Professor Volker Soergel  
15 h, DESY, Hamburg, Auditorium
- 9** Science Café DESY (<http://sciencecafe.desy.de>)  
Anziehende Wechselwirkung – Gluonen, der Sekundenkleber  
Hannes Jung, 17 h, DESY Bistro
- 16** Science Café DESY (<http://sciencecafe.desy.de>)  
Das Bild unter dem Bild – Ein unbekannter van Gogh  
im Licht von DORIS  
Karen Rickers-Appel, 17 h, DESY Bistro
- 20 - 24** Physics at the Terascale ([www.terascale.de/mcs2009](http://terascale.de/mcs2009))  
Monte Carlo School  
DESY, Hamburg
- 22** Public lecture  
Hermann von Helmholtz – Zur Person und seiner Zeit  
Jost Lemmerich, 19 h, DESY, Hamburg, Auditorium
- 23** Science Café DESY (<http://sciencecafe.desy.de>)  
Auch Topmodels bestehen nur aus Quarks  
Thomas Schörner-Sadenius, 17 h, DESY Bistro
- 30** Science Café DESY (<http://sciencecafe.desy.de>)  
Chaos und seine praktische Anwendung  
Roland Gunesch, 17 h, DESY Bistro

### May

- 4 - 29** Physics at the Terascale ([www.terascale.de/psri09](http://terascale.de/psri09))  
Institute on Parton Shower and Resummation  
DESY, Hamburg
- 7** Science Café DESY (<http://sciencecafe.desy.de>)  
Aufbruchsstimmung im neuen Zeitgeist – DESYs erfolgreiche Gründer  
Eckhard Weiß, 17 h, DESY Bistro
- 7 - 30** Exhibition ([www.desy.de/photowalk](http://www.desy.de/photowalk))  
Photographs of the Science Photo Walk 2009 at DESY  
Levantehaus, Mönckebergstraße, Hamburg
- 8 - 10** Hamburg Harbour Birthday ([www.weltmaschine.de](http://weltmaschine.de))  
Von Hei-di bis High-Tech; Exhibition „Weltmaschine“ LHC  
Kehrwiederspitze, Hamburg Harbour
- 11 - 15** PHOTON 2009 (<http://photon09.desy.de>)  
International Conference on the Structure and Interactions  
of the Photon  
DESY, Hamburg
- 28** Anniversary  
5 years DESY school Lab in Zeuthen  
18 h, DESY, foyer

# Stay inForm for charity

HSH-Nordbank Run 2009



by Daniela Hildebrandt

On 13 June Hamburg enterprises and companies are taking part in the eighth HSH Nordbank Run, a charity run in the Hamburg Harbour City. This time a team from DESY will also be at the start, and you can be part of it!

Would you like to join our DESY team and walk or run four kilometres for a good cause? Our team will set off at the same time, but we do not all have to necessarily reach the finish line at the same time. The motto of the HSH Nordbank Run in the Harbour City is "run, help and party". There will be no timekeeping. All DESY participants in the run will get a DESY T-shirt.

Daniela Hildebrandt from human resources (V2) is in charge of organising the team. Please register via email until 30 April. In early May, she will make a group registration of all participants and collect the entry fee. One week before the run the participant packets will be available. The more participants, the smaller the entry fee of currently 20 Euros, which every participant has to pay in advance.

Five Euros of each participant's fee is donated to the children's help society, run by the "Hamburger Abendblatt".

More information (in German):  
[www.hsh-nordbank-run.de](http://www.hsh-nordbank-run.de)



## More hands-on physics

Upgrade of the DESY school lab

Education means future. The school laboratory is one of the most visited educational (and thus future-oriented) institutions at DESY. Established more than ten years ago, it has continuously grown but nevertheless it is still overcrowded. The courses for one school term are booked out within no time and the rooms are too small. Right now, the quantum physics and radioactivity experiments take place in the same room. "Each time we change the set-up for the experiments, the work-stations suffer," says Karen Ong, head of the school lab.

Now, however, the DESY school lab is looking forward to an investment into the future. The City of Hamburg intends to fund an upgrade of the school lab with 400 000 Euros from Germany's federal economic stimulus package.

There are lots of plans for the upgrade: the quantum physics experiments are supposed to be installed in a separate experimental lab, and an additional room for teachers' and educators' seminars would be desirable. Currently, seminars like these are held in the vacuum lab. There are also plans for the thematic upgrade of the hands-on physics programme. A new field of experiments which is currently being developed will

be "particles and fields". The main building block for these topics is a cloud chamber, equipped with large Helmholtz magnetic coils. This will enable pupils to measure and evaluate tracks of nuclear radiation from the cloud chamber.



The DESY school lab pavilion is too small.

The economic stimulus package could also allow the enlargement of the school lab. The corresponding building, the "pavilion", will either be topped up or its ground floor extended. Currently, the priority is to find out which method is best with regard to the modular structure of the pavilion. "It would be great if we could start construction at the beginning of the summer holidays," says Karen Ong. This would considerably reduce delay time for the schools. (tz)

## KITE – A new information platform for developers

Knowledge is the only commodity that grows when you share it. This is the motto of KITE, a group of designers (Konstrukteure), engineers (Ingenieure), technicians (Techniker) and developers (Entwickler). Born out of the Open Space initiative 2008, the aim of the group is to exchange information on new developments at DESY. On the one hand, developers are able to discuss their ideas and problems with a larger group of colleagues, on the other hand double developments in two different groups can be avoided. The purpose is to jointly find solutions, even unconventional ones, and to share smart ideas coming from other fields of work. It is often the un-

conventional ideas and the views from outside that advance a project.

All information is to be administered centrally on a website, for example by creating something like a "yellow pages directory for developers". Above all, however, it is the personal contacts which will promote the exchange. Two "DESY engineering days" per year are planned in Hamburg and in Zeuthen; moreover, a monthly developer meeting will be held in Hamburg. The first one will take place on 8 April at 10 h in the large guest room in the canteen building. (tz)

### INFO

<http://kite.desy.de> (in German)

## Girls meet technology Girls' Day on 23 April

Girls are every bit as good in mathematics, physics and chemistry at school as boys. Often they even get higher grades. Yet there are considerably fewer girls than boys studying these subjects or taking up a job in a technological environment after school. The Girls' Day, almost an institution already, was created to support girls who are interested in technology, to show them positive role models and give them an insight into the world of technology. The DESY works council is still seeking volunteer tutors who are willing to show the girls around.

Girls' Day starts on 23 April at 9:30 h. In Zeuthen, ten girls and boys participate in this action day; in Hamburg, a total of 100 girls will spend a day on the DESY campus. The schoolgirls are from school years six to ten and between 12 and 16 years old. A volunteer tutor should ideally take care of two or three girls. After they receive a short introduction to the world of DESY, you pick up the girls at 9:30 from the auditorium and take them to your workplace. You have free reign to show them your work until 12:30 h. It would be perfect if the girls could carry out a small project at your workplace which they can later report on at



Girls' Day 2008 at DESY in Hamburg

school or that they can take home – the best level of understanding comes from hands-on activities. After lunch at the canteen you escort the girls to the auditorium where female scientists and technicians give presentations about their field of work. For questions and to register as a volunteer, email [br-sekretariat@desy.de](mailto:br-sekretariat@desy.de) or call 2404. (baw)



The proposals were presented in a plenary session.

## Experts give positive feedback Particle physics at DESY faces evaluation

At the end of February particle physics at DESY was put to the test for two and a half days: thirteen high-ranking scientists came to Hamburg to evaluate DESY's application for programme-oriented funding (PoF) in the field of particle physics in the Helmholtz Association. From 25 to 27 February, chaired by Michel Davier (Orsay), the international board of experts reviewed the strategic plans for the period from 2010 to 2014. The Helmholtz Association carries out research programme evaluations every five years. This was the second evaluation in the field of particle physics at DESY.

DESY proposals were first presented to the evaluators in a plenary session. Then, evaluators and DESY scientists met in smaller groups for discussions and question time on specific topics. On the last evaluation day the experts already provided a preliminary evaluation that is cause for cautious optimism: DESY research director Joachim Mnich reckons that the DESY particle physics programme will be strengthened by the evaluating commission. He expects to

get the final recommendations from the commission in May.

The evaluation is important for DESY in many respects. Coming off well will certainly confirm DESY's good worldwide reputation in the field of particle physics. However, after the HERA shutdown, particle physics at DESY is going through a period of transition. Thus it is important for future strategic planning to hear the opinions of internationally renowned experts. The draft of the PoF proposal for particle physics at DESY was also a good opportunity "to reflect in a structured way on the future of particle physics at DESY in this period of transition," says Mnich.

The German Committee on Elementary Particle Physics KET and the European Committee for Future Accelerators ECFA appointed panels which counselled DESY in this matter. (kv)



The police dogs Butch and Carlos in action.

## Man hunt in the storage halls

### Police dogs train at DESY

DESY does not only offer training in areas such as industrial mechanics, technical drawing, warehouse logistics or particle physics – chasing criminals has recently been added to the training programme on the DESY campus in Hamburg. To be fair though, the trainees have four legs and sharp teeth. Since March, police dogs are training inside and outside the large storage halls on the southern edge of the DESY premises. “We need buildings that are full of objects that offer all kinds of hiding spots,” explains Heiko Valli, policeman and dog trainer at the police dog school. Moreover, the dogs always have to be taken to new sites to avoid routine. Since the Hamburg police is DESY’s direct neighbour, they did not have to search far for a good location. In each training unit, twelve dogs and

their dog handlers had to successively pass the “basic training”: stop a “suspect” (a policeman in protective clothing; this time Valli himself), start barking, bite in case the suspect tries to escape and release on command. The training continued in the storage hall where the dogs had to find the hidden criminal and show their handler the hiding place by barking. This was child’s play for cold-nosed professionals like Pollo, Carlos, Bonsai and Butch; the excursion to the DESY site was evidently a great adventure for the dogs.

Hamburg has a total of 45 police dogs specialised in many different fields, including drug and explosives detection, blood and cadavers. Even so, each dog regularly has to pass the training for suspect search and detention. (baw)

#### Astronomy exhibition

On occasion of the International Year of Astronomy, the DESY library in Hamburg presents the exhibition “Astronomy – Science and Hobby”. Visitors get useful hints for their own observations, information on clubs and web addresses. Moreover, the library provides scientific and popular science literature on the topic.

#### Honorary Doctorate for Volker Soergel

Professor Volker Soergel, Chair of the DESY Directorate from 1981 to 1993, will be awarded an honorary doctorate from the University of Hamburg at a ceremony in the DESY auditorium on 6 April. He will be acknowledged for his achievements for physics in Hamburg. Speakers include the former federal research minister Heinz Riesenhuber.

## Inauguration of Neumayer III

On 20 February, Federal Minister of Education and Research Dr. Annette Schavan inaugurated the Neumayer Station III in Antarctica via video connection from Berlin. The new German research facility is located 6.5 kilometres south of the old Neumayer station. Neumayer Station III was erected in a period of only seven months in two Antarctic summer seasons by the Alfred Wegener Institute for Polar and Marine Research in the Helmholtz Association. The costs for the building amounted to approximately 40 Million Euros.

The station rests on 16 foundation slabs which compensate snowfall by means of a hydraulic lifting system. This innovative solution allows scientists to operate the station for 25 to 30 years. Moreover, the station can be completely dismantled if necessary. It is supplied with diesel generators for producing electricity, and their excess heat is used for heating and hot water. A wind power plant of about 30 kilowatts provides additional energy, more wind power plants will be added during the next years to minimise CO<sub>2</sub> emissions.

<http://www.helmholtz.de/hermann>

#### Imprint

##### Publisher

DESY-PR  
Notkestraße 85  
D-22607 Hamburg



##### Contact

email: [inform@desy.de](mailto:inform@desy.de)  
telephon +49/40/8998-3613  
[www.desy.de/inform](http://www.desy.de/inform)  
(online version + newsletter subscription)

##### Editors

Christian Mrotzek (V.i.S.d.P.)  
Jan Dreyling-Eschweiler  
Barbara Warmbein  
Ute Wilhelmsen  
Thomas Zoufal (editor-in-chief)

##### Production

Britta Liebau (layout)  
Veronika Werschner (translation)  
Kopierzentrale DESY (print)